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Using mobile technology with community health worker reinforcement to reduce rural preterm births: A pilot study

Background: One in ten infants in the US is born prematurely. This exacts a significant social and economic toll and often results in lifelong mental, behavioral, respiratory and neurological problems. In rural states like Nebraska, nearly half of the counties have high prematurity rates that exceed the national goal of 8.1% (March of Dimes, 2016). Reducing rural prematurity requires access to prenatal care and information; yet, resources and distances present important challenges. Growing evidence suggests mobile technology and Community Health Workers (CHW) are two resources that can overcome rural barriers to healthcare. The study purpose was to pilot test an evidence-based intervention using concierge mobile technology and CHW reinforcement.

Methodology & Theoretical Orientation: This was a two-group experimental design. The primary aim was to evaluate feasibility (fidelity for delivery and patient receipt, enrollment and data collection for ease, timing, missing data). The secondary aim assessed gestation, medical care adherence and patient activation. The third aim examined intervention impact on healthcare utilization costs. The theoretical framework involved behavioral change theory that focused on the intervention's influence on prenatal self-care behaviors.

Findings: Participants were highly satisfied and engaged with the intervention. Enrollment was slower than anticipated. Twenty-three of 100 participants did not have birth outcome data available leaving a final sample of n = 77. The intervention group had higher increases in activation and slightly more full-term deliveries. The control group had slightly greater medical adherence. Return on investment analysis stratified by three scenarios found cost savings per participant ranged from ranged from 15.4% - 237.6%.

Conclusion & Significance: Pilot findings suggest that the intervention can mitigate rural barriers that women face in accessing evidence-based prenatal care information, which is essential for reducing preterm births. Recommendations: Further study is needed with a larger and more at-risk population.

Biography

Mary E Cramer is tenured professor at UNMC College of Nursing and a Fellow in the American Academy of Nursing. Her research expertise is evaluation of community-based health programs. She has published extensively in peer-reviewed journals and findings have influenced local and state health policies. She authored the Internal Coalition Effectiveness© instrument (Cramer, Atwood, Stoner, 2006) used nationally and internationally. She currently serves as Evaluation Director on two grants: a) Great Plains IDeA Center for Translational Research ($22M, National Institutes of Health) and b) Central States Center for Agricultural Safety and Health ($9M, National Institute of Occupational Safety and Health).

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